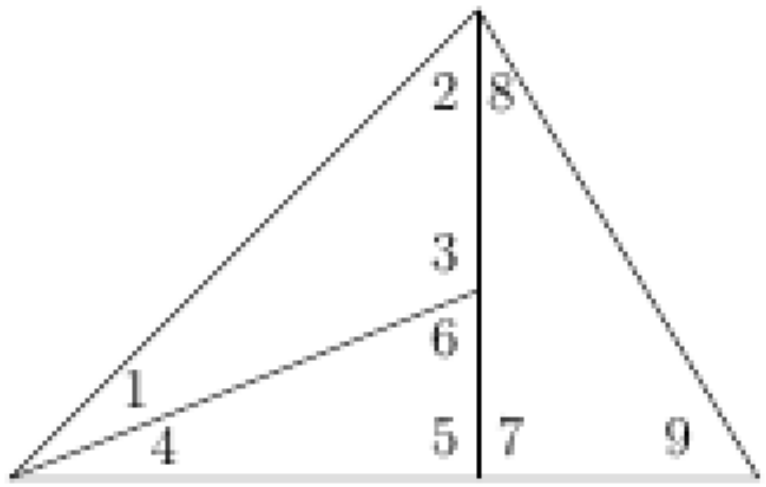
Topic: Adjacent and nonadjacent angles

Question: Which pair of angles are not adjacent angles?



Answer choices:

A $\angle 1, \angle 4$

B $\angle 2, \angle 3$

C $\angle 3, \angle 6$

D $\angle 5, \angle 7$

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Solution: B

We're looking for angles that don't share the same vertex. The figure shows that $\angle 2$ and $\angle 3$ don't share a vertex, so they aren't adjacent angles.

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Topic: Adjacent and nonadjacent angles

Question: Which pair of angles are definitely not adjacent angles?

Suppose a figure with several angles is drawn and labeled using A, B, C, D, and E. The angles below are from that figure.

Hint: Without the figure you can't tell for sure which angles *are* adjacent, but the letters in the angles can tell you which pair are *not* adjacent.

Answer choices:

A $\angle BAE, \angle DAE$

B $\angle CED, \angle BEC$

C $\angle ACD, \angle BCA$

D $\angle BCE, \angle CBE$

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Solution: D

When angles are named using three points, the middle point of the angle is always the vertex.

For example, looking at the angles from answer choice D:

$\angle BCE$ has its vertex at C

$\angle CBE$ has its vertex at B

Since those angles don't share a vertex, they can't be adjacent.

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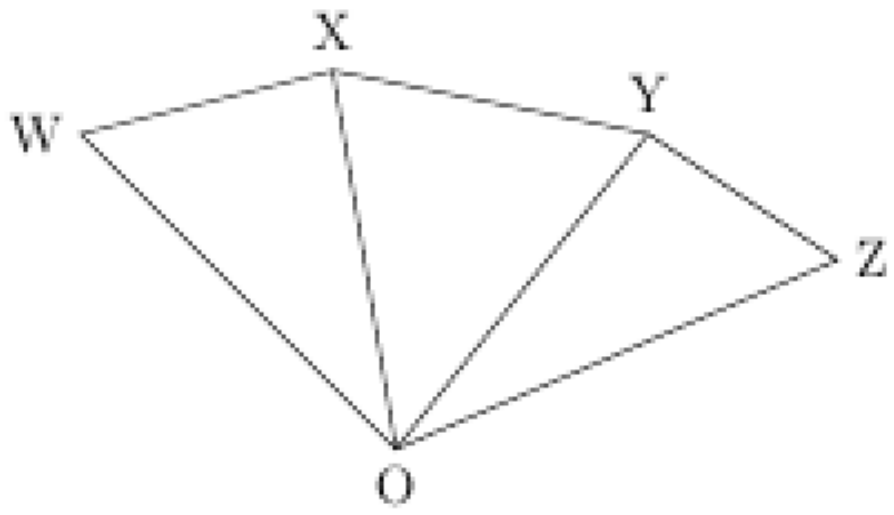
Question: Which pair of angles below are adjacent angles?



Answer choices:

A $\angle WOX, \angle WOY$

B $\angle ZYO, \angle ZYX$

C $\angle OYX, \angle ZYO$

D $\angle OWX, \angle OXW$

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Solution: C

$\angle OYX$ and $\angle ZYO$ share a common vertex, Y, and a common side, $\overline{OY}$, and have no common interior points. (They don't overlap.)

That fits the definition of adjacent angles, so answer choice C is correct.

The angles in answer choices A and B overlap, and the angles in answer choice D don't have a common vertex. That's why we rule those answers out.

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